

**ABSTRACT OF THE DISCLOSURE**

In a method, arrangement and computer program for analysis of neuronal activities in neuronal areas, signals are recorded, with each signal describing the neuronal activity in one of the neuronal areas. A matchable  
5 coupling forms the basis of all signals, described by the use of matchable coupling parameters that describe the statistical relationship between the signals. Probabilities for an occurrence of the signals are determined, whereby a statistical distribution is the basis of the signals. The matchable coupling parameters are determined by optimization of the probabilities,  
10 hence matched and analyzed.